

## Monohybrid Crosses using Punnett Square

1. Yellow seeds (Y) are dominant to green seeds (y) in peas.
  - a. Show a cross between a homozygous yellow seed (YY) with a green seed (yy).
  - b. Identify all possible genotypes and phenotypes of offspring.
  - c. What is the Probability of a yellow seed?
2. Two heterozygous yellow seeds are crossed together.
  - a. Show a cross between the heterozygous yellow seeds.
  - b. Identify all possible genotypes and phenotypes of offspring.
  - a. What is the probability the offspring will have yellow seed?
  - b. What is the probability the offspring will have green seed?
3. Red flowers (R) are dominant to white flowers (r)
  - a. Show a cross between a homozygous recessive for white flowers and a heterozygous red flower.
  - b. Identify all possible genotypes and phenotypes of offspring.
  - c. What is the probability that the offspring will have white flowers?
4. In a pea plant round seeds (W) are dominant over wrinkled (w).
  - a. Show the cross between a plant that is homozygous dominant for round seeds with a heterozygous plant.
  - b. What is the probability the offspring will have wrinkled seeds and round seeds?
5. Tongue rolling (T) is dominant to non-tongue rolling (t).
  - a. Show a cross between two parents that are heterozygous
  - b. Identify all possible genotypes and phenotypes of offspring.
  - c. What is the probability their offspring will be a tongue roller?
6. Widows peak (P) is dominant to straight hairline (p)
  - a. Show the cross between parent with straight hair and a heterozygous parent with a widow's peak.
  - b. Identify all possible genotypes and phenotypes of offspring.
  - c. What is the probability their offspring will have a widow's peak?
7. BONUS: Yellow pods are dominant to green pods in peas.
  - a. What is the probability that the ***second generation*** of plants will have yellow pods, if the parental generation is homozygous dominant and homozygous recessive for the pod trait? (***hint – need to use two Punnett squares.***)

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